

ABSTRACT OF THE DISCLOSURE

The distortion component of an optical signal received from an optical transmission system, such as an all-optical system, subject to noise and amplitude distortion components, can be evaluated by a method that utilises information derived from analysing the bit error ratio (BER) of the signal as a function of a movable threshold. The analysis is performed in high and low bit error ratio areas of the eye diagram used for data one/zero decision making. The intersections with the threshold axis (where $BER=0.25$) of extrapolations of the high and low bit error ratio values provide variables V1 and V2 which are divided ($V1/V2$) to obtain an estimate/prediction of the amplitude closure of the eye diagram resulting from amplitude distortion. The analysis is preferably carried out after Q conversion of the BER values. The method can also be extended to provide indications of Q, bit error ratio and optical signal-to-noise ratio within the signal.